Via Email & U.S. Mail

May 15, 2009

Mr. Michael Berkoff
Remedial Project Manager
U.S. EPA
Superfund Division/ Region 5
(SR-6J)
77 W. Jackson Blvd.
Chicago, IL 60604-2064

Re: Ellsworth Industrial Park Site (Site): Draft Remedial Investigation Report – Lovejoy Comments

Dear Mr. Berkoff:

This letter presents the comments of Lovejoy, Inc. regarding the draft Remedial Investigation Report (RI Report). Please note that our comments apply to Lovejoy's property, with the exception of item 1 below. We also adopt the core comments submitted by Karaganis White & Magel, Ltd. on April 9, 2009 and May 8, 2009, as well as the Site Model for Determination of Potential Remedial Approach submitted concurrently today with these comments. Pursuant to our meeting on May 8, 2009, we appreciate your willingness to extend our comment period through today, May, 15, 2009.

1. On June 6, 2008, Lovejoy submitted comments regarding the draft Human Health Risk Assessment. Those comments are still applicable to the HHRA and to the corresponding sections of the draft Remedial Investigation Report. Those comments are attached (Attachment A)

2. The soil component of the groundwater ingestion route (SCGIR) is only valid within the unsaturated zone (above the water table). According to Table 5-8, shallow aquifer water levels measured in wells located on Lovejoy's property varied from 3.43 ft at SS239 to 13.87 ft at SS241. As such, soil sample results are biased by the presence of groundwater and the SCGIR is not applicable below these depths. The RI should be revised and the volume of potentially impacted soil on Lovejoy's property should be reduced.

3. The proposed SCGIR SSL for the EIP is not applicable to Lovejoy because migration of impacts from shallow soils to the bedrock aquifer at Lovejoy is also not predicted to occur. Reasons include:

a. The area geology limits migration potential. Two primary geologic units underlie the Lovejoy Property and play a role in the occurrence and movement of groundwater. The upper-most bedrock unit, a Paleozoic dolomite rock, is overlain by two types of glacial materials: clayey, silty till and outwash sands and gravels. Below a depth of about 23 feet, an additional thickness of at least 43 feet of low-permeability, unfractured clay till exists at Lovejoy (see boring log for SS262D, logs for CPT 57 and CPT 58).

b. The alluvial aquifer is not located beneath Lovejoy's property. Thus the conduit proposed in the RI for transport of contaminants to the bedrock aquifer does not exist at Lovejoy. Figure 6-23, shows that the alluvial aquifer is located north (upgradient) of the Lovejoy site. The figure shows no impacts near Lovejoy.

c. The SCGIR SSL presented in the RI was calculated using a groundwater objective equal to the maximum contaminant level (MCL) of 5 µg/L for TCE. This objective is not appropriate for Lovejoy because the shallow water bearing zone is nonpotable (Class II groundwater). The RI notes that because the SWBZ is believed to be predominantly discontinuous a potentiometric surface map was not created. For this reason, hydraulic gradients, flow directions, and groundwater velocities were not determined. Because the SWBZ is discontinuous (and possibly perched) transport from this water bearing zone is not predicted. **Note – the RI terms this groundwater "water bearing zone" and does not use the term "aquifer" in its description.**

d. The area of soil impact for the Lovejoy property (see Figure 6-10e for reference) is confined to the shallow soils and located within 100 ft of the building north-south centerline. No soil impacts above proposed SSLs were detected in soils located at the site perimeter – an indication that even after many years onsite, migration of TCE has not occurred.

e. The bedrock aquifer flows south southeast (see pg. 10-8). Contaminants were detected in the bedrock aquifer upgradient of Lovejoy, but a sample collected from the bedrock aquifer well installed on the Lovejoy property (MW262D) showed no measurable contamination.

f. During the Core Group-EPA meeting on April 17, an Illinois EPA representative stated that they wanted to make certain that the SCGIR SSL would protect Downer's Grove Municipal Well #10. It should be noted that this well is located upgradient of the Lovejoy site and thus impacts migrating to the well pump are not predicted to occur.

4. Certain areas of bedrock within the EIP are likely more vulnerable to migrational transport by contaminants. Properties located in the vicinity of St. Joseph's Creek,

for instance, were predicted to be more likely sources of bedrock aquifer contamination than properties located in the southwest portion of the EIP. This analysis was presented in Dr. Fletcher Driscoll's expert report – copies were previously provided to EPA. Weston should incorporate a vulnerability assessment into the RI to better define the risk to the alluvial and bedrock aquifers. The vulnerability assessment should include an assessment of soil types and property findings and present a SCGIR SSL which is based on subarea chemical and geologic data rather than generalized assumptions about geology and hydrogeology for the entirety of the EIP.

5. Figure 5-8 shows a summary of soil sample locations with results. Locations shaded in red indicate samples having at least one detection. Weston shaded red locations SS241, SS240, SS239, and SS237. Note PCE was reportedly detected from SS-237 at 0 – 2.5 ft at concentration 1.4 J µg/Kg. The MDL was 5 µg/Kg. As such the value should be listed as "5U." Methylene chloride was also reportedly detected in this sample at several others at this location – a likely source of laboratory contamination, which may also be the source of the PCE false reading. The data reported on these Figures should only reflect values detected at concentrations greater than the method detection limit and for contaminants of concern. Methylene chloride is not a contaminant of concern at Lovejoy.

6. Page 6-26 of the RI indicates that TCE in soil samples was found at depths from 0 – 27.5 ft. No samples were collected at 0 ft. The RI should be revised and the volume of potentially impacted soil on Lovejoy's property should be reduced.

7. Figures 6-10a to 6-10f are supposed to estimate the soil contamination plume dimensions at Lovejoy. However, the plume dimensions shown on some of these figures imply that TCE impacted soils are present farther south than sample data would suggest. Further, the plume beneath the building likely moves east, following topography, not to the west as shown. The estimated plume size in Figures 6-10a, b, c, f, and g are incorrect and should be removed from the RI Report. Note Figure 6-10e appears to be accurate, based on the data obtained.

8. Figure 6-10a and 6-10g show an exceedance at Location SS018. Based on data provided in Table D-3f, all sample results were reported to be less than method detection limits, with exception of depth 14 – 16 ft with a concentration of 98 µg/Kg. This value is not applicable because a) it is less than the applicable SSL for TCE; and b) the sample was collected below the depth to shallow groundwater. The figures need to be revised or deleted (see comment above).

Thank you for considering these comments and note that we may need to supplement these comments based on our review of your responses to these comments, comments/responses from others, and following our review of the RI Report. Please contact me at your convenience if you have any questions.

Very truly yours,

Edward J. Cooney, P.E., Ph.D.

Attachment A

Via Email & U.S. Mail

June 6, 2008

Ms. Leah Evison, Ph.D.
U.S. EPA Region 5
(SR-6J)
77 W. Jackson Blvd.
Chicago, IL 60604-2064

Re: Ellsworth Industrial Park Site (Site): Draft Human Health Risk Assessment

Dear Dr. Evison:

This letter presents the comments of Lovejoy, Inc. regarding the draft Human Health Risk Assessment (Draft HHRA) prepared by EPA contractor Weston for the Site. We understand that the Remedial Investigation (RI) Report which is currently being drafted, and not the HHRA, will assess which soils may present a risk for leaching to groundwater. The objectives of the HHRA are to:

1) Estimate potential risks to people contacting site-related chemicals of potential concern (COPC) under scenarios of current and future plausible land use;

2) Provide an analysis of risks and help determine the need for remedial action(s) at the Site; and

3) Identify specific media and areas associated with unacceptable risk, if any.

As a result, Lovejoy comments are limited to the exposure pathways at the Site that are not associated with leaching of contaminants from soils to groundwater.

General Comments

1. Data relied on in developing the Draft HHRA: Weston relies on prior investigations, as well as the RI, for its conclusions in the Draft HHRA. The Draft HHRA should be revised to clarify this point.

2. Use of J values for contaminants reported at levels less than the method detection limit: This approach is scientifically unreliable because the method detection limit is just that – the limit of the instrument's ability to produce a reliable result. The Draft HHRA should be revised to delete these values because their use unfairly biases the identification of contaminants at the Site.

3. Data evaluation procedure: The results generated by the mobile laboratory and the CRL confirmation laboratory are so dissimilar that it raises concerns regarding the integrity of the sample analysis process. For example, in reviewing the data for its property, Lovejoy found wide disparities as shown in Table 1:

Table 1. Soil Result Comparison (µg/Kg)

Analyte (Location; ft)	Mobile Lab	CRL Confirmation
TCE (SS019; 5 – 7.5)	910.53	1500
TCE (SS019; 10 – 12.5)	56.3 U	34
TCE (SS021; 7.5 – 10)	73,998.7	35,000
TCE (SS022; 5 – 7.5)	12,914.8	33,000
PCE (SS022; 5 – 7.5)	30.99 J	11
TCE (SS222; 2 - 4)	543.2	1,800 J
TCE (SS223; 4 - 6)	30,480.7	25,000 J
VC (SS223; 4 - 6)	29.3 J	35
TCE (SS224; 2 - 4)	35.8 J	19

4. Scope of HHRA: The exposure assessment provided in Section 3 of the Draft HHRA includes a characterization of land use, area geology and climate, and potential receptors preparatory to describing exposure pathways which are complete within the Site. This section does not include any detailed description of the likely means of transport of contaminants of concern to the bedrock aquifer. The Draft HHRA states that an exposure pathway consists of four elements, source and mechanism of release, retention or transport medium, potential for human contact, and an exposure route, *e.g.*, ingestion of impacted soil (p. 3-6). There is no meaningful discussion of transport, however, and while Lovejoy understands that the RI will assess which soils may present a risk for leaching to groundwater, the HHRA cannot simply ignore the transport issue. This is because as acknowledged at p. 3-6, contaminant transport is a fundamental component of each contaminant exposure pathway discussed in the Draft HHRA. For example, contaminants released on properties such as those located in the southwest section of the Site, such as Lovejoy, appear confined to the Site because of underlying geology – *i.e.*, thickness of overburden and its low permeability (clay). The presence of fractures allows contaminants to migrate more readily; however few fractures have been identified in areas sampled in the southwest section of the Site. The HHRA should address the transport issue in a less cursory fashion – *i.e.*, by stating that: 1) transport varies widely across the Site because of differences in geology and hydrogeology; 2) transport of contaminants from soils into groundwater will be addressed in the RI; and 3) transport will be the determining factor that shapes the analysis and conclusions of the RI regarding the contribution, if any, of each property or area to bedrock aquifer contamination.

In addition, the absence of contaminants in St. Joseph's Creek stream sediments (discussed on p. 2-6 and 2-10 of the HHRA Report) is significant because it indicates that the storm water which flows into the creek by direct discharge or overland flow is not a transport mechanism for contaminants to the Creek. Accordingly, the exposure to

sediments was concluded to be an incomplete pathway. This finding should be better explained within the HHRA Report.

5. Potential receptors: The HHRA should better identify authorized versus unauthorized users – there are no definitions for either of these terms in the context of this Site -- and the reasonable exposure duration and frequency for each.

6. Exposure routes: The Draft HHRA states at p. 3-8 that there are "three primary exposure routes for chemicals in soil and water: ingestion, dermal absorption, and inhalation." The Draft HHRA then lists two additional pathways – inhalation of volatiles released into buildings, *i.e.*, vapor intrusion and into a utility corridor. In reality, the utility corridor pathway is identical to the inhalation from soil pathway – there is no real-life distinction between exposure in a manhole (utility worker) versus a trench (construction worker) and should be eliminated as a separate pathway.

7. Exposure pathways: The Report identifies the following exposure routes as applicable for OU1.

Table 2. Listed Exposure Pathways

	Site Workers	Construction Worker	Utility Worker
Soil – Ingestion	X	X	
Soil – Inhalation	X	X	
Soil – Dermal	X	X	
Soil – Vapor Intrusion	X		X
GW - Dermal		X	

In addition, Table 5-1 of the HHRA presents risk data for subsurface vapor intrusion from groundwater.

The concern with this section of the HHRA report is that the applicable exposure routes are not related to location -- *i.e.*, depth in accordance with generally accepted contaminant transport to exposure mechanisms. The exposure assessment needs to include an accurate assessment for the pathway to be deemed complete. In this case:

a. Incidental ingestion of soil – applicable for site workers soil contaminants present at depths less than 0.5 ft. The Report indicates that the pathway is complete for soils from 0 – 2 ft deep. See for example, "Environmental Data Needed for Public Health Assessments" prepared by the U.S. Department of Health and Human Services (1994) which states:

> "*Contaminated soils may expose individuals who live, play, or work near* the site to multiple contaminants at levels of health concern. Ingestion of contaminated surface soil, particularly by children, is a primary concern. Inhalation of contaminated dusts and direct dermal contact with contaminated soils also can lead to adverse health effects. Generally, the public is exposed to only the top few inches of soil; therefore, ATSDR has defined surface soil as the top 3 inches."

b. Inhalation of volatile contaminants from soil should only be applicable within the unsaturated zone at each site because EPA is evaluating the inhalation pathway associated with groundwater separately. Further, by definition, subsurface soil is considered to be the soil located between surface (e.g. top few inches) and top of the water table (see for example, EPA's Soil Screening Guidance documents, such as EPA/ 540/ R- 96/ 018, July 1996).

c. Ingestion of impacted groundwater – This pathway is incomplete. There are no potable wells within OU1 and an ordinance prohibits potable groundwater use in Downers Grove. Even if the Site were to be redeveloped for another use – *i.e.*, residential – the groundwater ordinance is an enforceable legal restriction and thus should be considered in the HHRA by stating that the pathway is incomplete.

d. Inhalation of volatile contaminants from groundwater – model specific – depends on depth of groundwater, soil types present, and for vapor intrusion building configuration, such having a basement or slab on grade. The HHRA should acknowledge and address this fact and state that the pathway will be incomplete or complete at individual areas / properties depending on site-specific analysis.

e. Dermal contact is only relevant for certain populations. For example, the Site work force would likely be exposed to the top 0.5 ft; and construction/utility workers' exposure would be depth of excavation, likely less than 10 ft. If groundwater is not present in top 10 ft, then the groundwater dermal contact pathway is incomplete. The HHRA should acknowledge and address these facts and consider such pathways to be incomplete.

f. Further, any construction or utility work would require special personal protective equipment (PPE). The site will undoubtedly have a requirement for construction worker caution statements for any property having residual contamination in place. As such the construction worker and utility exposure pathways should be considered incomplete for all exposure scenarios.

8. Exposure point concentration: The Draft HHRA defines the exposure point concentration (EPC) as the concentration of a chemical to which a receptor may be exposed. The EPC for each chemical in each medium is intended to represent a reasonable maximum estimate of the concentration a receptor is likely to be exposed to over time. EPCs were calculated as the 95 percent (%) upper confidence limit. If the

sample size was less than eight, the maximum concentration was used as the EPC. Surface and subsurface data were used to evaluate the soil exposure scenario. An EPC was calculated for both surface (0- 2 ft) and mixed surface/ subsurface soil (0- 10 ft) for site-wide data as well as for each of the 12 study areas (Areas A through L) and for each property within the Site.

It should be noted that the statistical methods for calculating UCLs are based on the assumption of random sampling. At Lovejoy, however, sampling was focused on areas of suspected contamination. In fact, the soil gas data was used to pre-determine where areas having potentially the greatest impact existed before collecting soil samples from under the building. Similarly soil samples collected along the east side of the building were tightly grouped in an area of potential shallow soil impact. In several instances, groundwater samples were collected from shallow borings, drilled through contaminated soils. Each of these targeted sampling approaches introduces a bias into the exposure assessment.

The use of statistics to characterize exposure must avoid introducing bias into statistical analyses (Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites, Office of Emergency and Remedial Response, EPA, 2002). Further, because the sampling that was conducted likely does introduce bias into the exposure assessment outcome, it is recommended that the HHRA note any potential bias in the EPC estimates.

In simplest terms, the conclusion that a certain sub-area represents a potential exposure risk, such as is presented in Table 5-1 of the HHRA Report, is inaccurate. The risk is only attributable to the targeted area sampled within each subarea, i.e., the majority of the subarea site may in fact be unimpacted.

Another concern is what depth represents the appropriate estimate of concentration for a given exposure route. The subsurface route (0-10 ft) is not applicable for ingestion, if data is available and utilized for surface soils (< 2 ft). In other words, it is not sensible to calculate ingestion exposure for non-construction or utility receptors using data for the 10 ft. depth instead of available data for actual surface soils. This inaccuracy should be corrected in the HHRA.

9. Receptor-specific parameters: Lovejoy has four concerns regarding this issue:

a. The exposure frequency for site workers should be reduced from 250 d/yr to 225 day/yr per EPA (OSWER Directive EPA 1991b).

b. The exposure frequency for future construction workers should be reduced from 250 d/yr to 30 day/yr per EPA. The default is the same as for utility corridor workers.

c. Careful consideration to applicable exposure durations needs to be made. Exposure duration of 24 hr/day for the given exposure lifetime is not applicable to the

exposed populations (site workers, construction or utility workers) within OU1. A 10 hour day/worker would be a conservative estimate for ED.

d. The exposure duration for utility corridor workers should be less than 1 year. OU1 is already developed thus any utility work would likely be repair-related. Two weeks is a conservative estimate for most repair-related work.

10. Pathway-specific parameters: Lovejoy has two comments regarding this discussion:

a. A soil ingestion rate for future construction workers of 330 mg/day was selected for the future construction worker. As noted above, any construction or utility work would require special personal protective equipment PPE. The site will undoubtedly have a requirement for construction worker caution statements for any property having residual contamination in place. As such the construction worker and utility exposure pathways should be considered incomplete for all exposure scenarios.

b. A groundwater ingestion pathway is discussed on p. 3-18. Potable use of groundwater is legally prohibited by the Downers Grove ordinance, so the section related to drinking water, ingestion of foods prepared with or in water, bathing and swimming should be deleted from this analysis.

Comments Specific to Lovejoy's Property

1. It appears that only four soil samples were collected from the 0 – 2 ft interval. Of these, three of the samples were collected beneath the building slab. None of the samples collected from areas outside the building (two samples total - collected from 0 – 2.5 and 0 – 5 ft) showed presence of TCE. Inside the building the soil ingestion and dermal contact pathways would be incomplete because the building foundation is considered an engineered barrier. Outside the building, no impacts were detected. Further, as noted above, soil ingestion should be evaluated using only surface soil results, e.g., 0 to 3 inches.

2. With respect to the Attachment B, 0-10 ft soil data used to calculate a UCL for Lovejoy, it appears that data collected in 2004 was used in conjunction with the data collected in 2007. The analytical detection levels were different for the 2004 data. For example, the detection limit for 1,1,2-trichloroethane at location GP-82 was 1,300 µg/Kg. This analyte was not reported as present in EPA's Data Evaluation Summary Report. However, not only does the HHRA assume the compound is present, the previously undetected value is listed as 650 µg/Kg in the calculation of UCL.

3. It would appear that the UCL calculations include replicate results as independent data points. For example, vinyl chloride was reported for sample SS222 (2 – 4 ft) as 37 µg/Kg from fixed lab and 75.6 µg/Kg from the mobile lab. In the case of the mobile lab, the value reported was less than the detection limit. In this case a value of 50% of the detection value was used in the UCL calculation. Similarly replicate results were used for evaluating TCE in samples SS021 (7.5 – 10 ft), SS022 (2.5 – 5 ft), SS223 (4 – 6 ft), SS13 (5 – 7.5 ft), SS17 (5 – 7.5 ft), etc. Both replicate values should not be used in the UCL calculation because this unfairly biases the point estimate of the mean. In the case of replicate values the average between measurements should be used.

It is also questionable whether data from several different labs having different method detection levels can be pooled into a single data set. Weston needs to perform a statistical test to demonstrate that pooling these sets for the site and for each sub area is statistically valid. The assumption that pre-RI data, data from the mobile lab, and data from fixed lab(s) can be pooled into a single data set is not justified.

4. Unreliability of groundwater data from uncased temporary wells installed directly into known soil contamination: The Draft HHRA states at page 2-3 that groundwater samples collected from temporary monitoring wells were used to characterize the nature and extent of contamination in groundwater and help determine locations for subsequent permanent monitoring well installations. This is not true for Lovejoy's property. This is significant because for the most part, the temporary wells that were located in shallow borings on the east side of the building. These water samples were collected from screened intervals inclusive of soil contamination. Thus contaminants in soil, especially in the shallow perched water at Lovejoy, likely biased the groundwater results in the temporary wells. In other words, the data collected from a temporary well, set within a known area of soil impact, reflects the contaminated soil into which they were drilled, rather than actual groundwater quality, and thus should not be considered reliable for evaluating groundwater exposure

No permanent monitoring wells were installed in these areas. The only permanent shallow groundwater monitoring wells located at Lovejoy were along the site property line / perimeter. The contrast in the data obtained from these permanent wells, versus the uncased temporary wells, is striking. COPCs were detected in only one instance in these wells, near Flexco; TCE concentration reported at 7.7 ppb.

5. Table 5-1 includes a total cancer risk (TCR) and total hazard index (THI) estimate for the ingestion, dermal contact, indoor vapors, and subsurface vapor intrusion groundwater exposure routes for present/future site workers. The inclusion of several of these routes is inaccurate at Lovejoy.

a. There is no exposure to site workers via the indoor vapor inhalation. Lovejoy is connected to the Downers Grove water supply (from Lake Michigan). There are no onsite wells – such that the inhalation factors for volatilization from groundwater into shower

air are not relevant for this site. Further, future site workers will be protected by a groundwater ordinance which will prohibit the construction of water wells. The pathway is incomplete and the TCR and THI values attributed to this pathway should be deleted.

b. There is no exposure to site workers via groundwater ingestion. There are no water wells onsite, and none will be allowed in future as stated above. The pathway is incomplete and the TCR and THI values attributed to this pathway should be deleted.

Note: the assumption that the shallow groundwater at Lovejoy could even be a potable water supply is flawed and for this reason alone, the exposure to COPCs found in shallow groundwater by human consumption are inaccurate. Former water supply wells located within this area were installed at depths greater than 80 ft in the bedrock aquifer. At Lovejoy, no COPCs were found present in water samples collected from the aquifer, i.e., in MW-262.

c. There is no exposure to site workers via groundwater dermal contact. See a and b explanation. The pathway is incomplete and the TCR and THI values attributed to this pathway should be deleted.

d. The conclusions based upon the TCR and THI need to be revised to indicate that groundwater vapor intrusion is the only complete pathway at Lovejoy. In this case, the applicable TCR and THI for groundwater exposure should be 7.4 E-08 and 8.8 E-05, respectively.

6. Table 5-1 includes a total cancer risk (TCR) and total hazard index (THI) estimate for the dermal contact groundwater exposure route for construction workers. This pathway should be removed because construction workers will be wearing personal protective equipment which will be required for anyone performing work below grade. Further, exposure/contact with groundwater would be extremely limited – in most instances groundwater infiltration into work areas is removed before work can begin. For these reasons, the exposure duration and frequency associated actual contact of groundwater by construction workers would be negligible.

Thank you for considering these comments and note that we may need to supplement these comments based on our review of your responses to these comments, comments/responses from others, and following our review of the RI Report. Please contact me at your convenience if you have any questions.

Very truly yours,

Edward J. Cooney, P.E., Ph.D.